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1950 Variety Performance Trials of Field Crops

University of Tennessee Agricultural Experiment Station

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BULLETIN No. 218 JANUARY 1951

1950 VARIETY PERFORMANCE TRIALS OF FIELD CROPS

Corn - Cotton - Oats - Wheat - Barley Soybeans - Red Clover - Alfalfa

By
SAM F. McMURRAY

THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXPERIMENT STATION
KNOXVILLE

RECOMMENDED VARIETIES FOR TENNESSEE

CORN

White Hybrids

Dixie 33
Dixie 17
Tennessee 10

Yellow Hybrids

Dixie 22
N. C. 27
Tennessee 602
Funk G711
Dixie 44

White (open-pollinated)

Jellicorse
Neal Paymaster

Yellow (open-pollinated)

None recommended

Note:

Early corns are not recommended because of relatively low yields. However, if early varieties are desired see table 1 for data on them.

RED CLOVER

Kenland
Tennessee Resistant
Cumberland

SMALL GRAINS

Winter Oats

LeConte
Forkedeer
Fulgrain (early)

Spring Oats

Columbia
Clinton

Wheat

Thorne
Fulcaster 612
Vigo

Barley

Jackson No. 1
Missouri Early Beardless (early, hooded)

SOYBEANS

S-100 (early)
Ogden (midseason)
Volstate (late)

ALFALFA

Kansas Common
Oklahoma Common
Buffalo } see text
Atlantic } on alfalfa

COTTON

Early	Medium Early	Medium Late
Empire	Coker 100 Wilt	Deltapine 15
Tennessee 241	White Gold Wilt	Stoneville 2B
Cobal	Delfos 9169	Coker 100 Staple

(See tables and text for data on these varieties)

1950 VARIETY PERFORMANCE TRIALS OF FIELD CROPS

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INTRODUCTION

Variety performance trials are conducted to provide information about the adaptation and yielding ability of the many varieties of the major field crops, and serve as a basis for recommending those that are best adapted to Tennessee. The trials have been conducted primarily at the six Experiment Stations which are located in the principal agricultural regions of the State as shown on page 16.

WHAT THE DATA MEAN

The varieties recommended herein by the Experiment Station have been tested for two or more years. In order for a variety to be recommended it must yield well and have growth characteristics that are adapted to Tennessee conditions.

Some varieties on the recommended list carrying a brief explanation such as "early", "late", "awnless", "hooded", etc., may have been included because they fit more effectively into the plans of some farmers.

In choosing a variety, look over the recommended list and then check the text and tables which give the yield and general characteristics of the recommended varieties along with many other varieties. All commercial varieties are shown in bold-face type; other entries are experimentals. It is always good to compare data on a new variety with those of an old familiar one. The data are shown in the order of the 1950 performance, with highest yielding varieties at the top.

When checking a variety's performance record in a table always look for the l. s. d. (least significant difference) figure at the bottom of the table. If the yields of any two varieties being compared differ by as much as the l. s. d. or more, the chances are very good that the variety having the higher yield is better than the other when grown under conditions similar to those under which the tests were conducted.

Tennessee, due to its narrowness north and south, has about the same length of growing season over much of its entire area. For this and possibly other reasons, a variety that does well in one part of the State usually does well state-wide. The varieties that utilize most of the available growing season are usually the ones that lead in yield. The Cumberland Plateau and Upper East Tennessee have shorter growing seasons, and full season crops in those sections may be damaged by fall frost unless they are planted early.

Adequate amounts of fertilizer, as determined by soil tests and other information, were applied to the variety plots at seeding time and the corn and small grain were given an application of nitrogen during the growing season.

CORN

The results of the corn tests are summarized in table 1. The data shown are the averages for 6 plots at each of 5 locations or the average of 30 plots for each entry. Individual plots consisted of 2 rows 3.5 feet apart and 20 feet long. A kernel was planted every 9 inches and thinned to a spacing of 18 inches apart in the rows giving an almost perfect stand at all locations of 8,300 plants per acre.

Most of the commercially available corns tested were chosen from those being sold to farmers in Tennessee. Seed of these was bought on the open market and represents exactly what the farmer gets when he buys these corns. A few of the more promising commercial hybrids from adjacent states also were included—adaptation does not stop at state lines. The experimental hybrids from the Tennessee corn-breeding program are indicated by "T". It is from such entries that future commercial hybrids are chosen; just as Dixie 22, Dixie 33, and others have been in the past. All the corns performing well enough in these tests to be recommended are certified in Tennessee or an adjacent state.

The yields in the 1950 corn tests were satisfactorily high. This resulted from adequate fertilization together with sufficient moisture throughout the entire season. Yield of the individual entries should not be the only basis for selecting a corn to grow. Careful attention should always be given to the percentage of erect plants,

TABLE 1—CORN—SUMMARY OF YIELDS AND GENERAL CHARACTERISTICS OF VARIETIES TESTED AT 5 LOCATIONS, 1950

Acre Yields, Based On Dry-Shelled Corn (15.5% Moisture)—Average 6 Replications At Each Location

Color	Variety	Average Acre Yield			Grain Quality Rating	Percent Erect Plants	Husk Cover Rating	Ears Per 100 Plants	Growing Season Required	1950 Acre Yields By Locations				
		4 Year	2 Year	1950 (5 Tests)						Greene-ville	Knox-ville	Cross-ville	Colum-bia	Jack-son
		Bu.	Bu.	Bu.						Bu.	Bu.	Bu.	Bu.	Bu.
W	Experimental T0120	.....	.....	122.6	good	86	good	205	full	154.8	128.6	94.4	124.0	111.1
W	**Dixie 33**	97.9	112.1	119.3	good	88	good	185	full	142.5	119.6	98.0	132.9	103.4
W	**Dixie 17**	94.2	109.2	117.9	good	76	good	199	full	150.7	117.5	84.6	131.7	105.0
Y	Experimental T9002	.....	.....	117.3	good	90	good	198	long	144.4	126.0	83.1	134.7	98.4
W	**Georgia 101**	.....	108.7	113.7	good	70	good	202	long	148.8	108.0	88.1	120.8	102.8
Y	**Dixie 22**	89.6	103.8	112.9	good	85	good	175	full	150.1	103.6	80.3	123.0	107.6
W	**Tennessee 10**	92.6	107.5	112.8	good	74	good	199	full	127.4	116.4	94.0	124.7	101.4
W	Experimental T0114	.....	.....	112.6	good	93	good	187	full	139.4	113.5	80.4	120.2	109.8
Y	**N. C. 27**	88.0	102.5	109.5	good	85	good	186	full	138.6	109.5	76.7	119.8	102.9
Y	Experimental T0012	.....	.....	107.4	good	81	good	132	full	138.3	109 6	84.9	110.2	94.3
Y	**Funk G711**	84.2	98.3	106.9	good	74	fair	157	full	136.2	113.7	74.9	113.1	96.5
Y	**Tennessee 602**	83.6	95.1	101.5	good	81	good	173	full	134.1	102.3	80.4	98.3	92.6
W	**Jellicorse (O. P.)**	83.7	94.7	100.3	good	76	good	182	full	120.4	114.6	68.6	107.4	90.7
Y	Experimental T0010	.....	.....	98.3	good	85	good	114	medium	119.6	106.2	71.9	93.8	99.8
W	**Kentucky 405B**	.....	89.1	96.0	good	89	fair	123	medium	115.8	98.3	71.6	98.5	95.8
W	**Neal Paymaster (O. P.)**	80.6	92.6	96.0	good	74	good	167	full	121.9	99.3	74.4	103.6	80.9
Y	**Dixie 44**	76.3	87.3	93.3	good	84	fair	129	medium	117.0	90.6	79.0	93.9	86.1
W	**U. S. 523W**	.....	.....	93.2	good	89	good	128	short	120.3	96.8	66.8	99.4	82.8
Y	**Kentucky 102**	77.4	87.3	92.8	fair	78	fair	138	medium	117.1	88.8	72.1	102.1	84.0
W	**Pioneer 505W**	.....	.....	90.8	fair	92	fair	112	short	114.5	90.1	65.7	101.7	81.9
W	**DeKalb 923W**	.....	86.7	90.2	fair	87	good	108	short	116.3	85.9	58.6	108.7	81.8
W	**Indiana 750B**	72.0	84.1	88.7	good	90	fair	106	short	100.8	89.1	75.4	93.4	85.0
Y	**Missouri 148**	.....	79.3	86.3	fair	84	fair	125	short	106.2	81.7	70.7	94.7	78.4
Y	**Funk G80**	.....	79.8	85.9	fair	86	poor	126	short	104.4	85.3	68.2	94.0	77.5
Y	**Kentucky 158**	.....	80.6	85.2	fair	88	fair	113	short	103.4	81.7	62.4	98.1	80.5
W	**Broadbent 235W**	.....	82.7	84.6	good	91	fair	106	short	101.9	91.3	73.2	85.3	71.4
Y	**National 134**	.....	77.6	81.6	fair	86	poor	110	short	102.1	84.1	62.4	83.1	76.2
Y	**Ed. J. Funk 840**	.....	78.4	78.9	fair	92	poor	110	short	92.7	75.6	64.9	88.6	72.6
Y	**Funk G145**	.....	81.3	77.9	fair	89	poor	110	short	92.8	76.7	59.6	87.4	72.9
Y	**Hunerkoch H23**	.....	.....	77.1	poor	88	poor	107	short	94.3	80.5	62.7	77.4	70.9
Y	**Missouri 313**	.....	74.8	76.7	poor	87	poor	113	short	100.3	74.2	58.5	82.6	68.1
Y	**U. S. 13**	67.9	74.9	76.5	fair	89	poor	110	short	94.2	73.4	62.1	82.2	70.5
Y	**DeKalb 847**	.....	.....	76.2	poor	92	poor	107	short	92.8	72.9	57.4	84.4	73.5
Y	**Pioneer 366**	.....	.....	75.6	poor	91	poor	109	short	93.7	79.5	57.0	76.6	71.4
Y	**Ed. J. Funk 746**	.....	.....	73.2	poor	89	poor	109	short	88.6	75.5	61.8	78.2	62.2
	L. s. d. (5%)	.....	.....	4.9	.....	.....	.....	.....	.....	11.3	14.1	9.1	8.5	12.3

husk cover, and grain quality which are shown in table 1. Ability of the plants to stand up in the field is of increasing importance in Tennessee as mechanical pickers become common. Corn grown in Tennessee should have a husk that goes well over the tip of the ear. This reduces insect, bird, and weather damage and makes a better quality grain.

Only about half of the corn acreage in Tennessee was planted to hybrids in 1950, and some of that was planted to the hybrids that have been proven unadapted because of their low yield, poor husk cover, and low grain quality.

It has been the plan to sample the hybrids being sold to Tennessee farmers each year by including in the tests as many as facilities permit. Any entry that has not shown itself adapted in either of two years can then be dropped. Accordingly most of the hybrids yielding less than U. S. 523W (table 1) that have been in the test for 2 or more years, will not be included in 1951. Georgia 101 will also be dropped because of its severe lodging even though it yields well. The record of the following hybrids in each of 2 previous years did not seem to justify testing them further, and they were not included in 1950: Funk G94, DeKalb 898, Pfister 170, Hunerkoch H14, Kentucky 103, Kentucky 203, and Pioneer 336. Their records can be found in Station Bulletins 206, 208, and 214.

COTTON

The cotton variety tests were conducted in cooperation with the U. S. Department of Agriculture and are part of the regional program for studying yield, fiber properties and spinning values of the more important commercial varieties and experimental strains. The tests were located in Knox County (East Tennessee), Lawrence County (lower Highland Rim) and Tipton County (Delta).

Results of the 1950 tests are shown in table 2. Varieties were replicated 8 times in each test. Plots at all locations were approximately 1/125 acre. A systematic insect control program was followed on all tests. The varieties are listed in order of the 1950 lint yields. Dollar values per acre are not presented in these tables, but the longer-stapled varieties make a more favorable showing when premiums for extra staple length are considered. In comparing the cotton varieties on the basis of value per acre, however, it

TABLE 2—COTTON—AVERAGE ACRE YIELDS AND GENERAL CHARACTERISTICS OF VARIETIES TESTED IN KNOX, LAWRENCE AND TIPTON COUNTIES, 1950

Average of 8 Replications At Each Location

Variety	Acre Yields			Lint			Boll Size No./Lb.	Relative Maturity	Est. Loss to Verticillium Wilt
	1949-50 Av. Lint	1950 Seed Cotton	1950 Lint	Turnout	Length[1]	Strength			
	Lbs.	Lbs.	Lbs.	Pct.	Ins.	Lbs./mg	No.		Pct.
Knox County Test									
Cobal	829	1531	585	38.2	1-3/32	6.14	55	early	.....
Mix 2 (Exp.)	821	1469	574	39.1	1-1/8	6.12	56	early	.....
Ute 4 (Exp.)	863	1431	570	39.8	1-1/8	6.34	57	medium	.....
Empire Wilt	809	1388	537	38.7	1-3/32	6.44	53	med. early	.....
Ute 5 (Exp.)	818	1361	535	39.3	1-1/8	6.15	61	medium	.....
Tennessee 241	824	1365	534	39.1	1-1/16	6.28	56	med. early	.....
Mix 3 (Exp.)	782	1343	512	38.1	1-3/32	6.65	59	early	.....
Cemp 310 (Exp.)	782	1213	479	39.5	1-1/16	6.44	62	early	.....
Plains	785	1211	459	37.9	1-3/32	6.11	56	med. late	.....
Paula C	.....	1126	425	37.7	1-3/32	6.41	57	medium	.....
Hibred	.....	1016	425	41.8	29/32	5.81	51	early	.....
Coker 100 Wilt	707	1105	420	38.0	1-3/32	6.38	67	medium	.....
Delfos 9169	762	1165	409	35.1	1-1/8	5.96	58	medium	.....
Stoneville 2B	739	1079	404	37.4	1-3/32	6.28	57	medium	.....
White Gold Wilt	710	1039	396	38.1	1-1/16	6.55	61	med. early	.....
Coker 100 Staple	676	1026	391	38.1	1-1/8	6.24	66	medium	.....
Deltapine 15	.....	941	386	41.0	1-1/16	6.01	69	med. late	.....
L. s. d. (5%)		197							
Lawrence County Test									
Ute 4 (Exp.)	807	2180	889	40.8	1-3/32	6.60	54	medium	.....
Ute 5 (Exp.)	.....	2212	887	40.1	1-3/32	6.26	57	medium	.....
Cemp 310 (Exp.)	739	2132	866	40.6	1-1/32	6.77	61	early	.....
Stoneville 2B	729	2204	857	38.9	1-3/32	6.24	56	medium	.....
Plains	759	2075	849	40.9	1-3/32	6.33	56	med. late	.....
Mix 3B (Exp.)	.....	2158	844	39.1	1-3/32	6.62	55	early	.....
Coker 100 Wilt	743	2067	843	40.8	1-1/8	5.96	61	medium	.....
Coker 100 Staple	736	2110	840	39.8	1-5/32	6.51	65	medium	.....
Cobal	753	2069	830	40.1	1-3/32	6.27	54	early	.....
White Gold Wilt	.....	2067	827	40.0	1-1/16	6.40	65	med. early	.....
Hibred	717	1836	793	43.2	7/8	6.36	53	early	.....
Paula C	.....	2026	770	38.0	1-3/32	6.51	56	medium	.....
Delfos 9169	716	2021	768	38.0	1-1/8	5.82	56	medium	.....
Empire Wilt	687	1877	747	39.8	1-3/32	6.03	53	med. early	.....
Tennessee 241	671	1885	737	39.1	1-3/32	6.15	55	med. early	.....
Deltapine 15	670	1704	728	42.7	1-3/32	6.07	63	med. late	.....
Spiers Long Staple	.....	1810	652	36.0	1-1/4	6.87	59	med. late	.....
L. s. d. (5%)		482							
Tipton County Test									
Mix 2 (Exp.)	.....	1912	719	37.6	1-3/32	6.05	56	early	19
Cobal	.....	1731	647	37.4	1-1/8	6.10	56	early	41
Mix 3 (Exp.)	.....	1783	637	35.7	1-3/32	6.16	57	early	24
Empire Wilt	.....	1698	620	36.5	1-3/32	6.12	52	med. early	24
Coker 100 Wilt	.....	1572	572	36.4	1-1/8	5.86	65	medium	18
Plains	.....	1496	551	36.8	1-1/8	6.08	62	med. late	38
Ute 5 (Exp.)	.....	1393	521	37.4	1-1/8	6.44	59	medium	48
Cemp 310 (Exp.)	.....	1363	519	38.1	1-1/16	6.24	62	early	39
Deltapine 15	.....	1255	487	38.8	1-3/32	6.23	67	med. late	40
Ute 4 (Exp.)	.....	1298	482	37.1	1-1/8	6.51	54	medium	53
Ute 1 (Exp.)	.....	1312	474	36.1	1-3/32	5.99	53	med. early	54
Tennessee 241	.....	1230	442	35.9	1-3/32	6.40	55	med. early	38
Coker 100 Staple	.....	1142	412	36.1	1-3/32	6.37	71	medium	46
Hibred	.....	930	377	40.5	7/8	5.81	57	early	71
Paula C	.....	1025	354	34.5	1-3/32	5.95	58	medium	54
White Gold Wilt	.....	868	322	37.1	1-3/32	6.42	67	med. early	66
Stoneville 2B	.....	855	315	36.9	1-3/32	6.18	61	medium	61
Delfos 9169	.....	728	251	34.5	1-1/8	6.36	61	medium	63
L. s. d. (5%)		457							

[1] Classified by Memphis Cotton Classing Office, PMA.

should be borne in mind that premiums for extra staple diminish sharply if the grade is lower than middling.

The relatively low yields in Tipton County were due principally to verticillium wilt, a disease that has caused severe damage to many hundreds of acres of cotton in the Delta area in the past several seasons. None of the commercial varieties are resistant to this disease, but some varieties in the test were not hurt as badly as others. An estimate of the verticillium wilt damage in the Tipton County test is shown in table 2. A variety test planted in this general area in 1949 was so badly damaged by verticillium wilt that it was abandoned.

Under normal conditions it is easier to get a high grade of

TABLE 3—COTTON—SUMMARY OF YIELDS AND GENERAL CHARACTERISTICS OF VARIETIES TESTED AT THE WEST TENNESSEE EXPERIMENT STATION, JACKSON, 1950

Average of 5 Replications

Variety	Acre Yields			Lint			Boll Size	Relative
	1948-49-50 Average Lint	1950 Seed Cotton	1950 Lint	Turnout	Length	Strength	No./Lb.	Maturity
Variety Test	Lbs.	Lbs.	Lbs.	Pct.	Ins.	Lbs/mg	No.	
Tenn. 818	973	2018	793	39.3	1.17	6.54	63	early
Stoneville 2B	940	1941	747	38.5	1.13	6.81	66	med. late
Empire Wilt	937	2057	778	37.8	1.15	6.79	55	early
Tenn. 241	928	2030	777	38.3	1.14	6.71	60	early
Coker 100 Staple	925	1997	767	38.4	1.19	6.65	73	med. late
White Gold Wilt	903	2072	798	38.5	1.12	6.89	66	medium
Coker 100 Wilt	901	1822	709	38.9	1.16	6.59	68	medium
Delfos 9169	885	1821	688	37.2	1.20	6.28	63	medium
Deltapine 15	846	1664	667	40.1	1.14	6.83	72	med. late
Paula	----	1866	683	36.6	1.13	6.76	61	med. late
L. s. d. (5%)		230						
New Strains Test A								
D. P. L. Fox	----	2293	874	38.1	1.12	6.26	74	early
Deltapine 33	----	2043	823	40.3	1.03	6.46	79	early
Empire 45	----	2303	861	37.4	1.13	6.40	56	early
Tenn. 12	----	2608	970	37.3	1.10	6.46	61	early
L. s. d. (5%)		275						

The data in table 3 were taken and analyzed under the supervision of N. I. Hancock, as part of the Experiment Station's cotton breeding program.

The first nine varieties in the table above are all adapted to Tennessee conditions. Tennessee 818 is being released and is being increased this year for production. Tennessee 818 is very similar to White Gold Wilt and Coker 100 Wilt in type of plant, but is earlier and has larger bolls than these two varieties.

The D. P. L. Fox is an early Deltapine type, but does not have quite as high lint turnout as Deltapine 15. Fox is prolific and the bolls, though small, pick well; it is not as vigorous in plant type as Deltapine 15.

cotton from the early varieties. Two new early varieties of cotton have recently been released for certification in Tennessee. They are Tennessee 241 developed by the Tennessee Experiment Station and Cobal developed by the U. S. Department of Agriculture in cooperation with the Experiment Station. Tennessee 241 has about the same maturity date as Empire and it also has a large boll similar to that of Empire. Tennessee 241 is adapted to areas of heavy clay soils of high fertility or to bottom lands. Cobal is slightly earlier than Empire. The bolls are large, fluffy, and easy to pick, but the seed cotton does not string out or fall from the burr. Cobal is medium vigorous and well adapted to all cotton soils in Tennessee. There will be only a limited amount of Cobal seed available for 1951 planting. See the recommended list of varieties on page 2.

SMALL GRAINS

Winter Oats—LeConte, a new variety released by the Tennessee Experiment Station in 1949, has done well in the tests again this year. LeConte should appeal to the farmers who harvest with combines because of its ability to stand long after it is ripe. It can

Fig. 1—Colonial, a true awnless barley at left; Jackson No. 1, an awned variety at right.

TABLE 4—SMALL GRAIN—SUMMARY OF YIELDS AND GENERAL CHARACTERISTICS OF VARIETIES TESTED IN 1950

Average of 4 Replications At Each Location

Variety	Av. Acre Yields 1948, '49 '53	Av. Acre Yields 1950[1]	Winter Hardiness	Standing Ability	Relative Maturity	Relative Height	Type of Awn
	Bu.	Bu.					
WINTER OATS							
Forkedeer	76.2	62.1	good	fair	med. early	tall	
LeConte	73.5	61.5	good	good	med. late	tall	
090 x Bond-23 (Exp.)	75.3	60.9	fair	good	med. early	tall	
Coker 45-67	.....	57.5	fair	good	med. early	med.	
Stanton	73.2	56.3	fair	fair	med. early	tall	
Fulgrain	60.5	50.0	poor	good	early	short	
L. s. d. (5%)		5.6					
WHEAT							
Thorne	34.4	30.5	good	good	late	med.	awnless
Nured	.....	28.6	good	good	medium	med.	awnless
Vahart	.....	27.9	good	good	medium	med.	awnless
Vigo	31.7	27.5	good	good	late	tall	awnless
Fulcaster 612	32.7	27.3	good	good	medium	tall	awned
Tenn. 46-1-1 (Exp.)	34.0	26.8	good	good	medium	tall	awned
Tenn. 47-1-20 (Exp.)	32.6	26.2	good	good	medium	tall	awnless
Carala	25.4	18.0	fair	fair	early	short	awnless
L. s. d. (5%)		2.1					
BARLEY							
Jackson No. 1	67.6	42.4	good	good	med. early	tall	smooth awned
Colonial	.....	40.7	fair	good	med. early	med.	awnless
Kentucky No. 1	63.7	39.0	good	fair	late	tall	rough awned
Wong	52.7	33.2	fair	good	med. early	med.	short awned
Calhoun	59.3	32.7	fair	good	early	short	awnless
Hooded 921-14 (Exp.)	54.2	32.1	good	good	early	med.	hooded
Mo. Early Beardless	32.7	29.6	good	fair	early	tall	hooded
L. s. d. (5%)		2.9					

[1] The 1950 average yield is an average of 6 tests for oats and 5 tests for wheat and for barley.

be used on highly fertile soil where Forkedeer and Stanton tend to lodge. Fulgrain, recommended only because of its earliness, is short and also stands well.

Spring Oats—Many years of testing have shown that the winter oats will outyield spring oats in almost every case when both are seeded at their proper times. There is a place for spring oats where corn is harvested too late for fall oats to be seeded; under these conditions, however, there is no winter cover or winter grazing realized from spring oats. Columbia and Clinton have been the leading varieties in Tennessee but tests have shown that Ajax, Clinton 59, Binton and Mindo are also satisfactory in this State.

Barley—Jackson No. 1 led the tests again this year. This variety has a smooth awn, stands well, and threshes easily. Colonial

and Calhoun are true beardless varieties that yield well and would be recommended if they were more winter hardy. Missouri Early Beardless is a hooded variety that is recommended only where an early or hooded variety is desired.

Wheat—There was only a small yield difference between the different varieties in the wheat tests this year except for the early variety Carala which was reduced in yield because of a heavy infestation of mildew and rust. Although the other commercial varieties are not resistant to these diseases they were not damaged as much as Carala, probably because of their later maturity. The experimental variety Tennessee 46-1-1 is resistant to both diseases and Tennessee 47-1-20 is resistant to rust. Vigo has done well in the wheat experiments for 3 years and is being added to the list of recommended wheats this year.

SOYBEANS

The average yield data from the soybean variety experiments for the years from 1946 through 1949 (see Station Bulletin 214) show no significant difference between any of 6 of the leading varieties grown in Tennessee which consist of Ogden, Volstate, S-100, Roanoke, Arksoy, and Macoupin. These data indicate that the performance of varieties differing in maturity is about equal over a period of several years, although in any one year the rainfall distribution may favor either an early, midseason, or late variety. The varieties S-100 (early), Ogden (midseason), and Volstate (late) are recommended for seed and hay in Tennessee on the basis of

TABLE 5—SOYBEANS—SUMMARY OF YIELDS AND GENERAL CHARACTERISTICS OF VARIETIES TESTED IN 1950

Average of 4 Replications At Each Location

Variety	Average Yield		1950 Yields By Locations			Oil Content	Range in Date of Harvest
	1949, '50 (3 tests)	1950	Knox-ville	Colum-bia	Jack-son		
	Bu.	Bu.	Bu.	Bu.	Bu.	%	
Ogden	40.3	43.9	42.3	37.8	51.7	21.0	Oct. 15-Nov. 1
Volstate	37.0	37.2	35.3	33.6	42.6	21.3	Nov. 1-Nov. 15
S-100	37.0	35.5	39.9	23.5	43.2	19.1	Sept. 20-Oct. 5
D623-9	.....	34.8	37.9	26.3	40.3	21.7	Oct. 5-Oct. 15
Wabash	36.0	34.6	36.5	24.9	42.3	23.2	Sept. 15-Oct. 1
L6-5679	.....	32.7	33.4	24.8	39.9	22.7	Sept. 20-Oct. 5
L. s. d. (5%)	.....	2.3	7.7	4.4	5.7		

their good yields, high oil content, good quality of beans, and distribution of maturity dates, see table 5. The varieties mature about October 1, October 15, and November 1 respectively, making it possible for a grower to distribute his soybean harvest over a period of a month or more. Wabash, a relatively new variety, has had a fair yield in the tests for the past two years. It is about two weeks earlier than S-100; and has a very high oil content.

RED CLOVER

See table 6 for yield data on red clover variety trials. Kenland, Tennessee Wilt Resistant, and Cumberland are the red clover varieties that are recommended for Tennessee. Kenland is a new variety that was developed cooperatively by the Kentucky Experiment Station and the USDA. It is resistant to southern anthracnose and is characteristically longer-lived than most other varieties. Tennessee Wilt (anthracnose) Resistant and Cumberland are two high yielding disease resistant varieties. Large amounts of seed are sold in Tennessee under these names that are not these varieties and are usually inferior to them. Midland does not have southern anthracnose resistance, but yields well when this disease is not serious. Tennessee Purple Seeded red clover is an experimental variety of this Station. It is southern anthracnose resistant, powdery mildew resistant and possesses a uniform seed color (purple). It has a long life comparable to that of Kenland.

TABLE 6—RED CLOVER—SUMMARY OF YIELDS OF VARIETIES TESTED IN 1949 AND 1950 AT KNOXVILLE, CROSSVILLE AND JACKSON

Average of 4 Replications At Each Location

Variety	Average Yield—Tons Air-Dry Hay Per Acre		
	1949-1950 (6 tests)	1949 (3 tests)	1950 (3 tests)
	Tons	Tons	Tons
Kenland	.....	.....	3.12
Tennessee Purple Seeded (Exp.)	2.76	2.78	2.74
Midland	2.80	2.89	2.72
Tennessee Wilt Resistant	2.75	3.07	2.44
Cumberland	2.76	3.12	2.40
Van Fossen	2.32	2.67	1.97
L. s. d. (5%)	.17	.16	.29

ALFALFA

Seeding good alfalfa seed of one of the adapted varieties is very important because a poor stand can result in a relatively large loss of time and money. It is important to obtain common alfalfa seed from those states that have a climate similar to that of Tennessee. Therefore, the bag of common alfalfa seed should carry a tag stamped U. S. Verified Origin showing the place of production. The varieties that have produced best in Tennessee are Kansas Common and Oklahoma Common, see table 7. Buffalo and Atlantic, two relatively new varieties, have also been found to yield heavy hay crops under Tennessee conditions. Buffalo was developed at the Kansas Experiment Station from an old line of Kansas Common. It was selected for its resistance to bacteria wilt (not important in Tennessee) and for its high production. Atlantic was developed by the New Jersey Experiment Station. Both of these varieties yield well but are not recommended over the Kansas Common varieties, especially if one must pay a premium for their seed. California Common alfalfa is not winter-hardy enough for Tennessee. Certain other new varieties in the alfalfa variety test look promising.

TABLE 7—ALFALFA—SUMMARY OF YIELDS OF VARIETIES TESTED IN 1950

Average of 4 Replications At Each Location

Yields In Tons Air-Dry Hay Per Acre

Variety	Location of Tests Seeded Fall 1949				Average 4 Tests
	Knox-ville	Cross-ville	Colum-bia	Jack-son	
	Tons	Tons	Tons	Tons	Tons
Atlantic	2.65	3.46	5.31	7.17	4.65
Oklahoma Common	2.47	2.94	5.65	6.22	4.32
Kansas Common	2.40	3.08	4.88	6.43	4.20
Buffalo	2.18	2.73	5.20	5.95	4.02
California Common	1.57	[1]	4.06	5.89	2.88
Narragansett	2.26	3.98	5.48	.....	.....
New Mexico	.....	2.88	5.08	6.07	.....
Argentina	2.09	2.96	4.59	.....	.....
Wiliamsburg	2.77	.....	.....	.....	.....
L. s. d. (5%)	.51	.45	1.01	.58	.32

[1] California Common came up to a perfect stand and was 99% winter-killed at Crossville.

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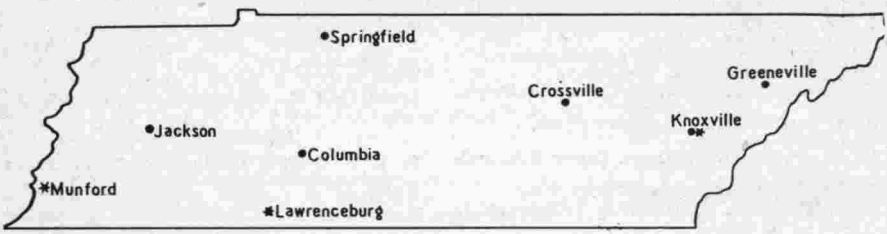
LOCATION OF VARIETY TESTS



• Location of Experiment Stations where all experiments except cotton were conducted.

* Location of cotton tests which were conducted on the USDA Cotton Field Station, Knoxville; E. T. Adams' farm, Lawrenceburg; and Wooten Brothers farm, Munford.

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